

included in the database. Therefore, counties on the border of North Carolina where many residents go to out-of-state hospitals will have asthma hospital discharge rates that are too low. Counties where this is likely to be a significant problem are: Camden, Caswell, Clay, Currituck, Dare, and Gates.

Results

During state fiscal year 1997-1998, more than 70,000 children in the Medicaid program ages 0-14 had a diagnosis of or used a prescription drug for asthma. This represented 13.3 percent of the total children ages 0-14 who were enrolled in Medicaid. The amount paid by Medicaid for asthma-related medical services and drugs during this year was more than \$23,000,000, or an average of \$331 per child with asthma. Table 1 shows this information by age group. More than half of the children ages 0-14 with asthma were under age 5 and the prevalence rate was highest in this age group (17.3%). The prevalence rate decreases with age, though the average dollar amount per child expended by Medicaid for asthma-related services increases with age.

Table 2 presents the data by county of residence. Figure 1 is a county map of the prevalence of asthma (as measured here) among children on Medicaid. It can be seen that the prevalence is generally higher in the rural eastern and western counties of North Carolina. The prevalence rate in the ten most urban counties in

North Carolina is 11.7 percent, compared to a rate of 14.2 percent in the remaining more rural counties of the state. This is in contrast to some other studies that have found the prevalence of childhood asthma to be higher in urban areas.^{4,5,6} Figure 2 shows the counties with a Medicaid asthma prevalence rate higher than the state average of 13.3 percent.

Of the approximately 70,000 children ages 0-14 on Medicaid who were identified with asthma, more than 63,000 or 90 percent were using one or more asthma prescription drugs paid for by Medicaid during the year. There was very little variation in this percentage across the three age groups: 0-4, 5-9, and 10-14. Thus, it appears that the large majority of these children with asthma are receiving some treatment with prescription drugs for their condition. The appropriateness of the treatment cannot be determined without a more detailed analysis of the drug claims.^{5,7} It should be mentioned that the dollar amounts paid for asthma-related services are probably less than would be found in other populations, since Medicaid generally pays a smaller proportion of the amount charged by providers than other third-party payers.

During 1995-1997, there were 19,584 hospitalizations of North Carolina children ages 0-14 where asthma was mentioned as the primary or a contributing cause of admission. This was an average of more than 6,500 asthma-related hospitalizations per year in this age group. The average annual hospital discharge rate

Table 1
State Fiscal Year 1998 North Carolina Medicaid Claims for Asthma*, Ages 0 to 14

Age Group	Total Number of Medicaid Asthmatic Children*	Total Number of Medicaid-Enrolled Children	Percent of Medicaid Enrollees with Asthma Claims	Total Amount Expended	Average Amount Expended per Asthmatic Child
State Total	70,218	528,621	13.3%	\$23,245,239	\$331
0 to 4	42,058	242,837	17.3%	\$12,391,250	\$295
5 to 9	17,386	170,646	10.2%	\$6,369,366	\$366
10 to 14	10,774	115,138	9.4%	\$4,484,623	\$416

*Represents an unduplicated count of paid Medicaid claims from 7/1/97 to 6/30/98 with any diagnosis of asthma (ICD-9CM=493) or a drug prescribed for asthmatics.